Commonwealth of Virginia
Department of General Services
Division of Consolidated Laboratory Services
Richmond, Virginia

TFC Inspection Checklist 1-7-2015

Protocol for the Certification of Laboratories Performing Tuning Fork Certification Testing

Facility Name: _____ Lab ID: _____

Assessor: _____ Analyst: _____ Inspection Date: _____

ATTACHMENTS
- ☐ **Laboratory Equipment List, #6959 or equivalent**
- ☐ **Laboratory Personnel List, #6960 or equivalent**
- ☐ **Laboratory Quality Manual Checklist, #6957**

Item	Reference	Requirement	Yes	No	Comments
	EQUIPMENT				
51	Protocol §III.B.5	Does the equipment list provided by the laboratory correspond to the equipment observed to be in use on site?			
52	Protocol §III.B.8	Is documentation of equipment calibration and maintenance available?			
53	Protocol §III.B.8	Does documentation included the dates and types of service performed on each piece of equipment during the past three years?			
	RECORDKEEPING (GENERAL)				
54	Protocol §III.B.14.a.i	Were tuning fork certification records retained for at least three years?			
55	Protocol §III.B.14.a.iv	Were analyst training records also maintained for a minimum of three years?			
56	Protocol §III.B.13	Were training records, including an initial demonstration of capability, available for each analyst performing tuning fork certification testing?			Note: *Not Applicable for technicians employed more than 3 y. Labs only required to keep records 3 y.*
57	Protocol §III.B.4	Did the laboratory have a log of the printed names, initials and signatures of all analysts performing tuning fork certification testing?			

Notes/Comments

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CERTIFICATION RECORDS

Records Reviewed _____ Date _____ Analyst(s) _____

_____ _____ _____

_____ _____ _____

Item	Reference	Requirement	Yes	No	Comments
58	Protocol §III.B.11.e.i	Were the reference tuning forks observed at the beginning and end of each certification test batch?			
59	Protocol §III.B.11.e.ii	Were the data for the reference tuning forks evaluated to verify that the frequency of oscillation was within ±0.5% of that specified by the manufacturer or the most recent independent certification?			
60	Protocol §III.B.11.e.iii	Was the temperature of the test environment recorded at beginning and end of each certification test batch?			
61	Protocol §III.B.11.e.iv	Was the temperature of the test environment maintained within the range of 20°C – 30°C?			
62	Protocol §III.B.15.a	Was each tuning fork identified by a serial number or other unique identifier?			
63	Protocol §III.B.11.e.v	Was each tuning fork subjected to a minimum of 2 observations that were averaged to calculate the mph equivalent?			
64	Protocol §III.B.11.e.v	Were calculations performed accurately?			
65	Protocol §III.B.14.b	Were all raw data recorded in ink or entered directly into a computer program?			
66	Protocol §III.B.11.e.vi	Had the analysts initialed and dated each page of their work?			
67	Protocol §III.B.14.b	Were corrections to records documented with a single line through the original entry and dated and initialed by the person who made the correction?			

Notes/Comments

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Item	**Reference**	**Requirement**	**Yes**	**No**	**Comments**
68	Protocol §III.B.11.f.i	Were completed certificates reviewed for transcription errors?			
69	Protocol §III.B.11.f.i	Was each review documented with the date and signature or initials of the reviewer?			
70	Protocol §III.B.15	Did each certificate include the following? ☐ The serial number of each tuning fork ☐ The date testing was performed ☐ The frequency at which the tuning fork was found to oscillate ☐ The corresponding calculated MPH ☐ The radar frequency band within which the tuning fork was to be used ☐ The name and signature of the analyst who performed the testing ☐ The date, seal and signature of notarization			
OBSERVATION OF TUNING FORK CERTIFICATION TESTING ON SITE					
71	Protocol §III.B.11.e.i	Were reference standards observed before and after the sample observation batch?			
72	§III.B.11.e.iii	Was temperature recorded at the beginning and end of the sample observation batch?			
73	§III.B.11.e.iv	Was the test environment maintained between 20° C and 30° C throughout the period of the tests?			
74	§III.B.14.b.i	Was raw data recorded in ink (or directly entered into a computer program)?			
75	§III.B.11.e.v	Data reported as the average of a minimum of 2 observations of each tuning fork?			
76		Were the correct calculation factors applied to the averages of the observed frequency counts?			K band: mph=freq (Hz) x 0.013883 Ka band: mph=freq (Hz) x 0.0094455
77	§III.B.11	Was the calibration procedure performed as written?			

References K band : 1 mph = 72.0301 Hz MPH = Frequency (Hz)/72.0301 = Frequency (Hz) x 0.013883

Ka band: 1 mph = 105.87 Hz MPH = Frequency (Hz)/105.87 = Frequency (Hz) x 0.0094455

Notes/Comments

CHECKLISTS ARE AN INTERVIEW/REVIEW TOOL USED BY ASSESSORS AND ARE NOT TO BE CONSIDERED AS A SUBSTITUTE FOR REQUIREMENTS OF THE PUBLISHED REFERENCE. CHECKLISTS ARE SUBJECT TO CHANGE.